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Future Trends in Games for Education and Training

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Changing Landscape

- 5 years ago
  1. It was difficult to track activities in games
  2. 3D was for installed desktop applications
  3. Web games meant Flash games
  4. The big 3 dominated games
  5. PC gaming was dying
  6. Motion control might have potential
  7. Social Gaming might have potential
  8. Second Life dominated Virtual Worlds
  9. Mobile was coming up fast
  10. Cloud gaming was in our future
  11. Gamification has potential

- Today
  1. xAPI is being developed
  2. 3D is pervasive
  3. Web games come in many flavors HTML5, Flash, Unity, and more
  4. Mobile games and divergent marketplaces
  5. PC gaming is having a renaissance
  6. Motion control is here to stay
  7. Social gaming didn't mean social and is on its heals
  8. Linden Lab is diversifying and what it means to be a virtual world is changing
  9. Mobile is here to stay
  10. Cloud gaming came and went
  11. Badges are being explored heavily

Today's Landscape

- New Devices for Games
- New User Interfaces
- Easy Content Creation
- Big Data

New Devices for Games

- New Game Consoles
- Micro Consoles
- Steam Box
- High Powered Mobile Devices
- Pervasive/Mobile Web

A New Generation of Consoles

- Touch Screen Interfaces
  - Clearly borrowed from mobile
- Motion Control
  - Inspired by Wii and Kinect
- Sharing Built In
  - TwitchTV
  - YouTube style "Let's plays"
  - OnLive style video share

Micro Consoles

- Ouya
  - $99.00 Android device
  - Earned $9.5 million on Kickstarter
  - Began shipping in March
  - 10,000 registered developers
  - Touch screen on controller
- GameStick
  - $79.00 Android device
  - Earned $650k on Kickstarter
  - Device fits inside controller
- Project Shield
  - Nvidia
  - Android based device
  - Portable
  - New Shield each year
  - Claims it will outpace consoles

Steam Box

- Valve's rumored entry into the console space

- In 2011 Forbes reported that Steam had a 70% share of the Downloadable PC market.

- This is a roughly $4 billion dollar market

- First real competitor to the big 3 in the console space

- Big Screen Mode already rolled out

Tablets Have Power

- Razor's Edge Tablet
  - Nvidia 640M Graphics Card
  - Full Windows 8
  - Runs new games at full speed
- Mobile is becoming the norm not the underpowered supplement
- Tegra 4 is 6x faster than Tegra 3 and 22x faster than Tegra 2

Pervasive/Mobile Web

- ## HTML5
  - Open frameworks available
  - Virtual World Framework (VWF)

- ## Unity3D
  - Available on most platforms
  - Huge user base

- ## Flash
  - Still installed on everything
  - On mobile through Air
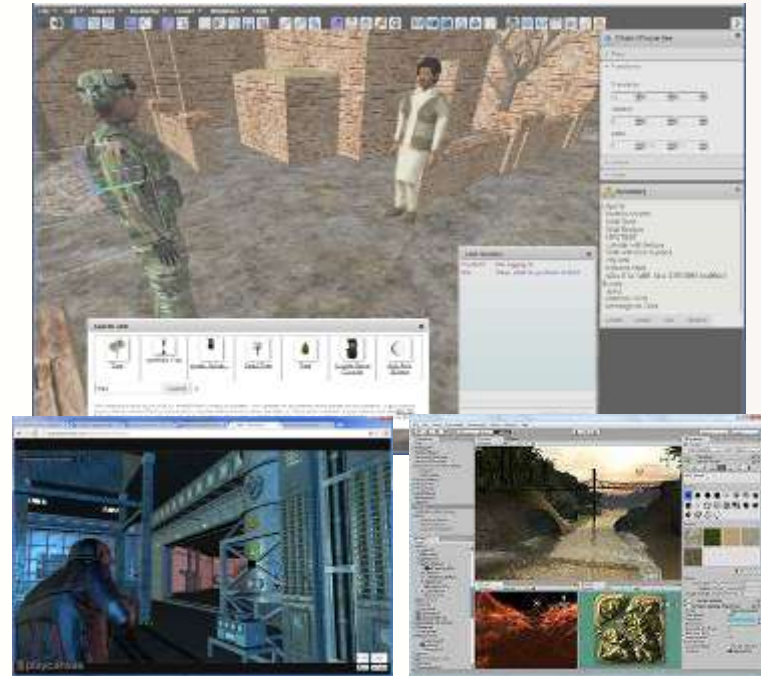
New User Interfaces

- NFC – Near Field Communication
- AR – Augmented Reality Grows Up
- VR – Virtual Reality (Oculus Rift)
- Perceptive Computing
- Brain Machine Interfaces

NFC – Near Field Communication

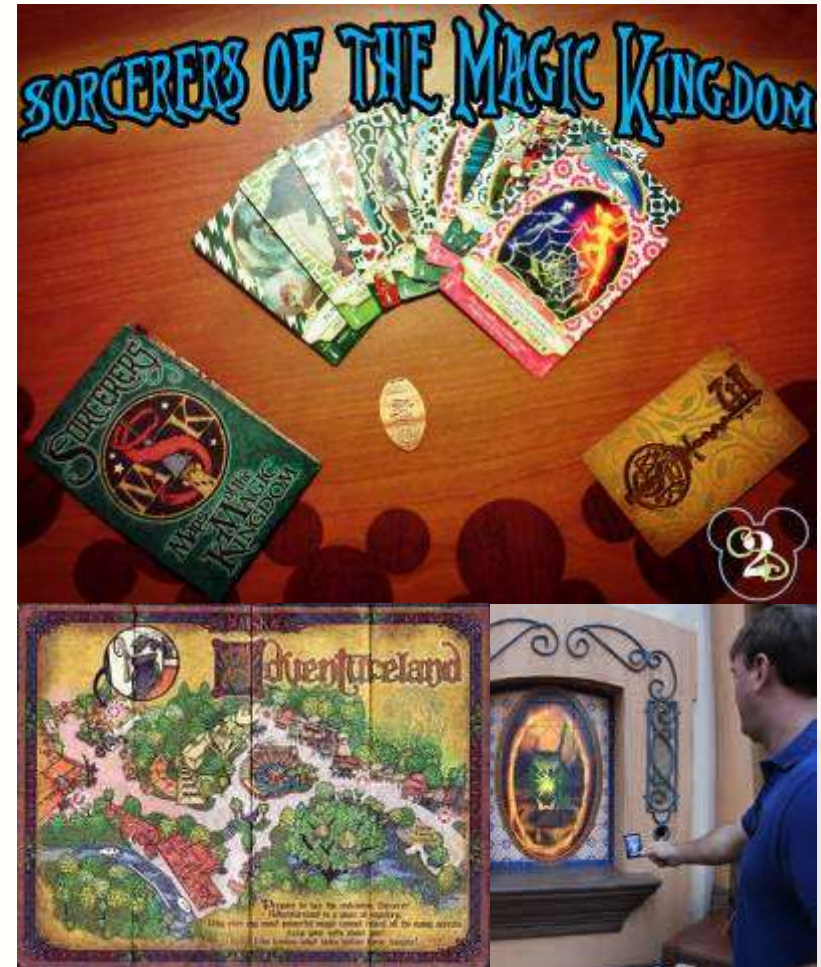- Small Chips that make tracking objects easy

Sky Landers and More

- NFC is already part of the gaming ecosystem
- Skylanders crosses the billion dollar revenue mark with 100m toys sold

Cross Overs

- Sorcerers of the Magic Kingdom

- Combines AR and NFC

- Brings new life to Magic Kingdom Park

AR grows up

- On all of our mobile gaming devices
- 2 Main types
  - Use of markers or cards
  - Use of overlays, GPS, and compass
- Google glasses will become a game changer

Oculus Rift

- New breed of Virtual Reality glasses
- Uses shaders to overcome more complex lenses
- Improved field of view
- Cutting down the delay to reduce "sim sickness"

Perceptive Computing

- Computers will know we are there
- Track every part of player
  - Eyes
  - Heads
  - Hands
  - Fingers
  - Feet?
- Leap Motion, Intel Perceptive Computing, Kinect 2, Eye Trackers, etc.

Brain Machine Interfaces

- Mindwave, an EEG for under $100
- Control all types of activities
  - Helicopter
  - Emotive Headgear
  - Concentration Training
- Many other EEG devices exist many with more fidelity

Easy Content Creation

- New tools to make games

- Mod tools expected

- Tools expected to be Minecraft easy
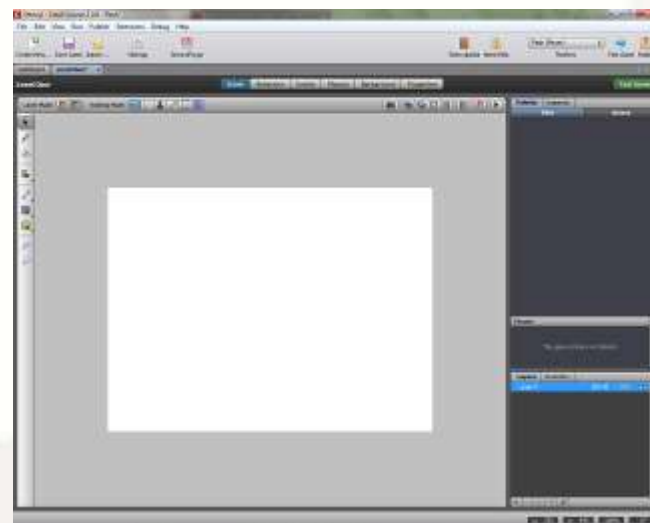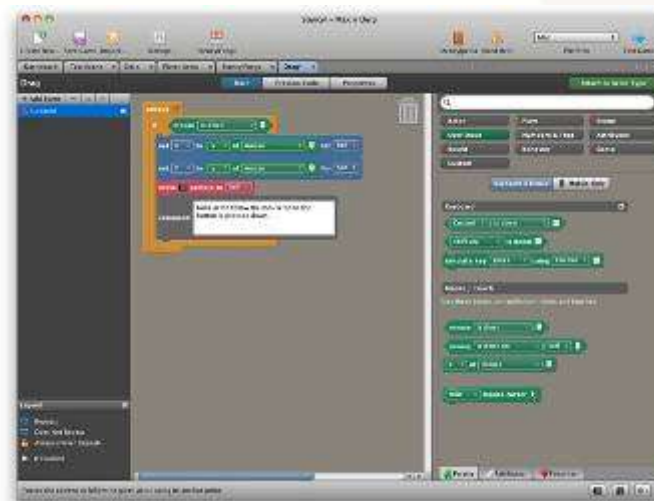
- 3D Printing

Game Salad

- Drag-and-drop code

- Simple actor based level editing

- Outputs to iOS and HTML5

Stencyl

- Leverages Scratch
- Outputs Flash
- Asset and script sharing
- Multiplatform
- Moving towards HTML 5
- Can add own code

Mod Tools Expected

- Tools now exist in game

- Many times the same tools are used by the dev team

- Little Big Planet and Portal 2 are great examples

- Even small games are providing tools to players

Minecraft Easy

- "Minecraft is a game about breaking and placing blocks. At first, people built structures to protect against nocturnal monsters, but as the game grew players worked together to create wonderful, imaginative things." From minecraft.net

- Really easy building environment

- Being used in education today

A Note About Minecraft Creators

- Markus Persson and Jens Bergensten were named titans in the 2013 Time 100. The annual list of top 100 most influential people in the world.

- Persson was voted number 2 in the user vote.

- They are both 33.

- Mojang earned $237 Million in 2012

- Launching protected servers for kids.

- Given source code to teachers.

Minecraft-Like

- Infiniminer – Influenced Minecraft
- FortressCraft – Xbox 360 IG Knockoff
- Terraria – 2D MineCraft
- Patterns – Linden Labs Minecraft with triangles
- Roblox – A game creation platform
- CraftStudio – A multiplayer game creation platform
- Voxel Farm – HD style Minecraft
- Many many more exist

Procedural World: Sandbox Mode

VWF Sandbox Block Builder
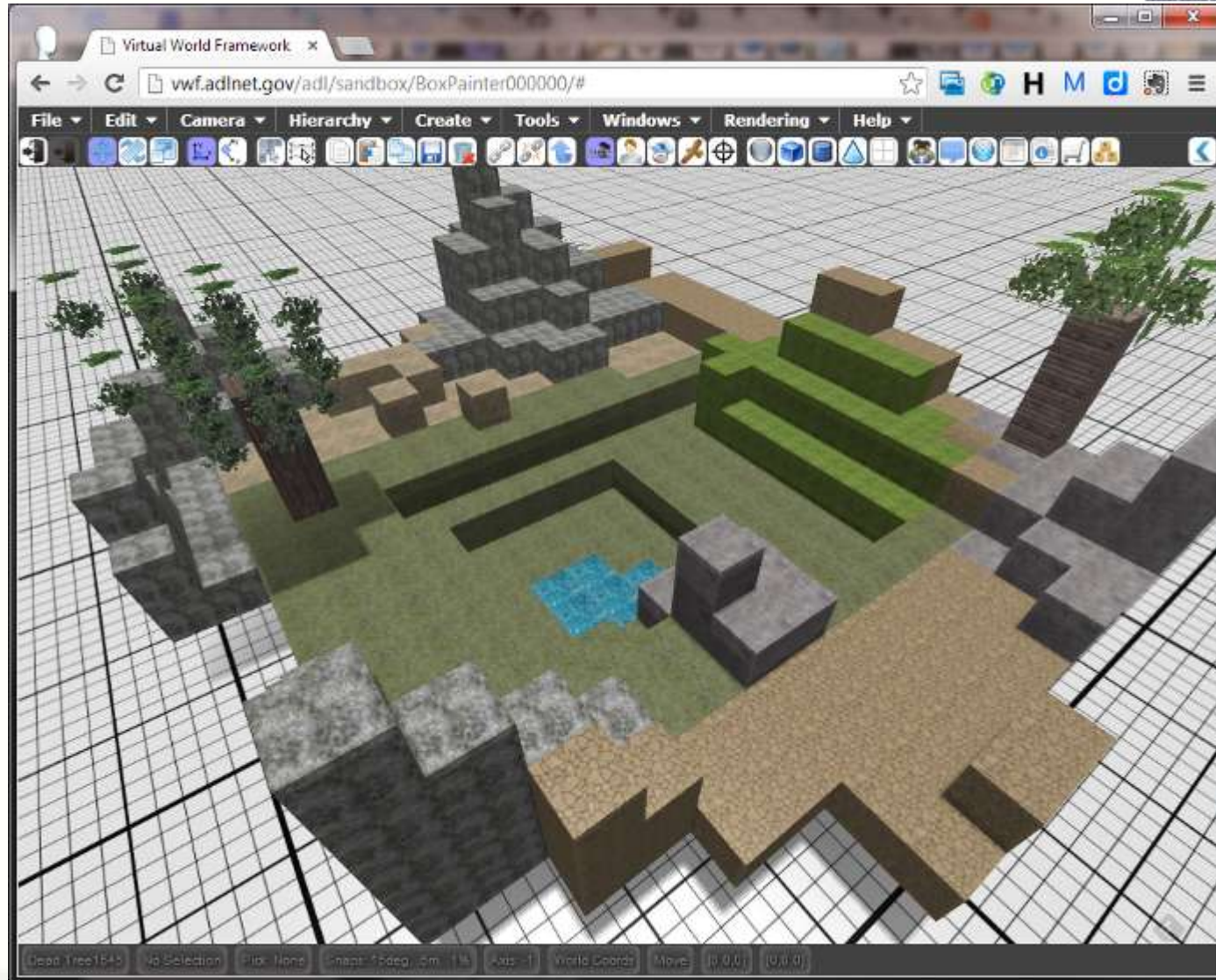
Linden Lab's Diversification
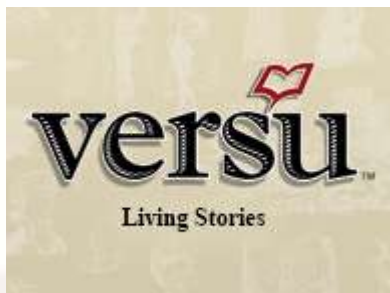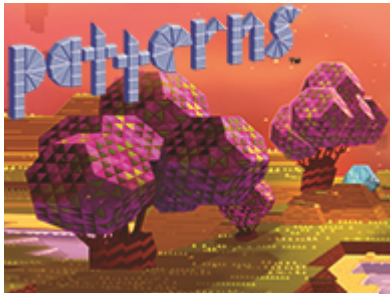
- "Makers of shared creative spaces"
- Patterns – A Minecraft clone using triangles and other shapes
- Dio – A place to create a shared space on the 2D web
- Creatorverse – A 2D physics toolkit with easy sharing of worlds
- Versu – A new take on interactive fiction with intelligent agents playing roles
- Second Life – Yes they still do Second Life as well

3D Printing

- Print full board games to reduce the cost of shipping

- Print new cases for the Ouya

- Print characters or game pieces either to remember experiences or to replace broken parts.

- Print special equipment for one off development.
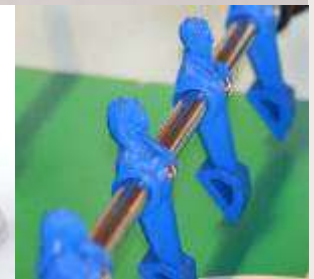
Big Data

- Leveraging Data for Play
- Processing Data

Leveraging Data for Play

- NASA Topography Data brought real slopes into SSX Snowboarding

- Zynga changes gameplay on the fly based on player statistics

- Grockit leveraged data to predict how students would perform in their network

Processing Data

- Google Image Labeler: Identify images and improve search results

- Fold.it: Fold proteins and cure diseases

- Duolingo.com: Learn a Language and translate the internet

Emerging Technology Applied to Learning

- Learner expectations are changing
  - Learners are being exposed to these technologies today and will expect us to use them appropriately
  - Beyond fidelity arguments
- Push vs. pull mentality
  - Learners are expecting us to push new learning opportunities to them using the technologies they have with them
  - Location, Emotional state, equipment available will all play a role
- Involving learners in the process
  - Learners can be leveraged to create or critique learning content
  - They will expect to be involved

Preparing for the Future

- Curation more important than creation
  - Will the 80/20 rule stand? How will we determine trusted sources?

- Even easier creation
  - What will our new tools look like? What will we be able to create?

- True ubiquity of experiences
  - How experiences port, report, and behave?

- Start generating data
  - What information is important?
  - How will we process it?

Be Part of the Future

- Learning App Challenge

- Serious Games Showcase & Challenge

- DADL Working Group

- Webinar Series

- Resources page
  - This talk will be posted
  - Other links
  - http://www.adlnet.gov/webinars/future-trends-in-games-for-education-and-training

Contact Us

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